

IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the Application:

LISTING OF CLAIMS:

1. (Currently Amended) An apparatus comprising:
  - a network processor capable of performing packet switching and routing functions, said network processor having a plurality of processors wherein selected ones of said processors are programmed to provide test system functionality;
  - storage associated with said network processor;
  - an interface coupling said network processor to a communications network; and
  - instructions and data within said storage, said instructions and data directing said network processor to function as a packet capture and analysis tool used to analyze packets on said communications network.
2. (Original) The apparatus of claim 1 wherein said data and instructions direct said network processor to analyze Real Time Transport Protocol (RTP) packet streams on said communications network.
3. (Currently Amended) The apparatus of claim 1 wherein said data and instructions direct said network processor to analyze packet streams for other protocols, said other protocols selected from the group comprising ~~such as~~ TCP, UDP, TCP/IP, SCTP, MGCP, H.323 and H.248.
- ~~3~~4. (Currently Amended) The apparatus of claim 1 wherein said data and instructions direct said network processor to analyze a signaling protocol packet stream on said communications network.

45. (Currently Amended) The apparatus of claim 1 wherein said packets are analyzed for characteristics selected from the group consisting of total packets, bytes per second and number of RTP streams present.

56. (Currently Amended) The apparatus of claim 1 wherein said packets are analyzed to provide performance statistics of streams of packets on said communications network.

67. (Currently Amended) The apparatus of claim 56 wherein said statistics are selected from the group consisting of call rate, call aborts, call setup to audio time, call establish time, call release time, and call duration.

78. (Currently Amended) The apparatus of claim 1 wherein said packets are analyzed to provide audio statistics, said audio statistics selected from the group consisting of of min./max. minimum average packet jitter, maximum average packet jitter, number of packets lost, number of re-ordered packets, number of duplicate packets, number of packet errors, an audio encoding algorithm, packets per second, audio data per packets and number of packets.

89. (Currently Amended) The apparatus of claim 1 wherein said packets are analyzed as groups of streams to provide group statistics, said group statistics selected from the group consisting of maximum average packet jitter across all streams in the group, /average packet jitter across all streams in the group, maximum number of packets lost across all streams in the group, max/average number of packets lost across all the streams in the group, maximum number of packets re-ordered across all streams in the group, max/average number of packets re-ordered across all streams in the group, maximum number of packets duplicated across all the streams in the group, max/average number of packets duplicated across all the streams in the group, maximum number of packet errors across all the streams in the group, max/average number of packets errorederrors

across all the streams in the group, breakdown of streams by audio encoding, maximum length of time, ~~max~~/average length of time, and average payload size.

~~9~~10. (Currently Amended) The apparatus of claim 1 wherein said packets are analyzed to provide interface characteristics, said interface characteristics selected from the group consisting of maximum number of simultaneous active streams of packets, ~~max~~/average number of simultaneous active streams of packets, current number of active streams, total number and rate of packets, total number and rate of bytes, maximum percent usage of interface bandwidth ~~max~~/average percent usage of interface bandwidth, and total number and rate of ~~error~~error packets.

~~4~~11. (Currently Amended) An apparatus comprising:  
a network processor capable of performing packet switching and routing functions, said network processor having a plurality of processors wherein selected ones of said processors are programmed to provide test system functionality;  
storage associated with said network processor;  
an interface coupling said network processor to a communications network; and  
instructions and data within said storage, said instructions and data directing said network processor to function as a packet capture and analysis tool used to provide profiles of network parameters.

~~4~~12. (Currently amended) The apparatus of claim ~~4~~11 wherein said profiles of network parameters are selected from the group consisting of jitter, loss, delay, packet reordering and packet duplication.

4213. (Currently Amended) An apparatus comprising:

a network processor capable of performing packet switching and routing functions, said network processor having a plurality of processors wherein selected ones of said processors are programmed to provide test system functionality;

storage associated with said network processor;

an interface coupling said network processor to a communications network; and

instructions and data within said storage, said instructions and data directing said network processor to function as a packet capture and analysis tool used to capture packets on said communications network.

4314. (Currently amended) The apparatus of claim 4213 wherein said packets are filtered such that only packets meeting a criteria are captured.

4415. (Currently amended) The apparatus of claim 4314 wherein said criteria are ~~sleeected~~ selected from the group ~~consisiting~~ consisting of a source IP address, destination IP address, source UDP ~~port~~ part number, destination UDP port number, interface port, audio encoding algorithm, MAC address, MAC Ethernet type, IP protocol number, IP differentiated services byte, and a specific byte mask pattern.

4516. (Currently amended) The apparatus of claim 4213 wherein a trigger is used to start and/or stop packet capture.

4617. (Currently amended) The apparatus of claim 4516 wherein said triggering is based on an event selected from the group consisting of a packet error, a start of a packet stream, an end of a packet stream, jitter greater than a threshold, a dropped packet, a duplicate packet, a re-ordered packet, a call signaling event, source IP address, destination IP address, source UDP port number, destination

UDP port number, interface port, audio encoding algorithm, MAC address, MAC Ethernet type, IP protocol number and a specific byte mask pattern.

4718. (Currently amended) The apparatus of claim 4213 wherein data stripping is used to remove unwanted data from a captured packet.

4819. (Currently amended) The apparatus of claim 4718 wherein data stripping excludes data selected from the group consisting of packet header, packet payload, and partial payload.

4920. (Currently Amended) The apparatus of claim 123 wherein said captured packets are post process analyzed.

2021. (Currently amended) The apparatus of claim 4920 wherein said post process analyzing provides function selected from the group consisting of view filtering, data filtering, packet viewing and packet decoding.

22. (New) An apparatus comprising:

a network processor capable of performing packet switching and routing functions, said network processor having a plurality of processors wherein selected ones of said processors are programmed to provide test system functionality;

storage associated with said network processor;

an interface coupling said network processor to a communications network; and

instructions and data within said storage, said instructions and data directing said network processor to function as a packet capture and analysis tool used to analyze packets on said communications network and wherein said packets are analyzed as groups of streams to provide group statistics, said group statistics selected from the group consisting of max/average packet jitter across

all stream in the group, maximum number of packets lost across all the streams in the group average number of packets lost across all the streams in the group, maximum number of packets re-ordered across all streams in the group, average number of packets re-ordered across all streams in the group, maximum number of packets duplicated across all the streams in the group, average number of packets duplicated across all the streams in the group, maximum number of packet errors across all the streams in the group average number of packet errors across all the streams in the group, breakdown of streams by audio encoding, maximum length of time, average length of time, and average payload size.